



Marked up Version of SEQUENCE LISTING section



SEQUENCE LISTING

<110> HUANG, QIHONG
REED, JOHN C.
DEVERAUX, QUINN L.
MAEDA, SUSUMU

<120> INHIBITOR OF APOPTOSIS PROTEINS AND NUCLEIC ACIDS AND
METHODS FOR MAKING AND USING THEM

<130> 087102/027 2537

<140> 10/041,859

<141> 2002-01-07

<150> 60/260,478

<151> 2001-01-08

<160> 27

<170> PatentIn Ver. 3.3

<210> 1

<211> 3773

<212> DNA

<213> Bombyx mori

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<221> CDS

<222> (2733)..(3770)

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aaa aat gga gct gcc gcc acg ttg gtg atg tta aaa aat gcg cgg gat	2801
Lys Asn Gly Ala Ala Thr Leu Val Met Leu Lys Asn Ala Arg Asp	
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gca aaa atg cga cct ttc att ggt ccg ctc atg tta tcc tcg tgt gag	2849
Ala Lys Met Arg Pro Phe Ile Gly Pro Leu Met Leu Ser Ser Cys Glu	
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Ser Ser Thr Thr Ser Thr Leu Pro Ser Pro Ser Ser Ser Ala Asp Lys	
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Thr Asp Asn His Asp Thr Phe Asn Phe Leu Pro Asp Met Pro Asp Met	
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Arg Arg Glu Glu Glu Arg Leu Lys Thr Phe Asp Gln Trp Pro Val Thr	
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Phe Leu Thr Pro Glu Gln Leu Ala Arg Asn Gly Phe Tyr Tyr Leu Gly	
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cgc ggc gac gaa gtg tgc tgt gct ttc tgt aag gta gaa att atg agg	3089
Arg Gly Asp Glu Val Cys Cys Ala Phe Cys Lys Val Glu Ile Met Arg	
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Trp Val Glu Gly Asp Asp Pro Ala Ala Asp His Arg Arg Trp Ala Pro	
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Gln Cys Pro Phe Val Arg Lys Gln Met Tyr Ala Asn Ala Gly Gly Glu	
140 145 150	
gcg acc gct gtc ggt aga gac gaa tgt ggg gcc agt gcg gcc acg cag	3233
Ala Thr Ala Val Gly Arg Asp Glu Cys Gly Ala Ser Ala Ala Thr Gln	
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Pro Pro Arg Met Pro Gly Pro Val His Ala Arg Tyr Ser Thr Glu Ala	
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gcg cgg ctc gcc acc ttc aag gac tgg ccg aga cgt atg cgc caa aaa	3329
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ccc gag gaa ctg gca gag gcc gga ttc ttc tat aca ggc caa ggt gac	3377
Pro Glu Glu Leu Ala Glu Ala Gly Phe Phe Tyr Thr Gly Gln Gly Asp	
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aaa acg aaa tgc ttc tat tgc gac gga ggg cta aaa gat tgg gaa agc	3425
Lys Thr Lys Cys Phe Tyr Cys Asp Gly Gly Leu Lys Asp Trp Glu Ser	
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Tyr	Val	Gln	Leu	Val	Lys	Gly	Arg	Asp	Tyr	Ile	Gln	Lys	Val	Lys	Ser		
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Glu	Ala	Thr	Ala	Ile	Ser	Ala	Ser	Glu	Glu	Glu	Gln	Ala	Ala	Thr	Asn		
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Ser	Lys	Ile	Cys	Lys	Ile	Cys	Tyr	Ser	Glu	Glu	Arg	Asn	Val	Cys	Phe		
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Val	Pro	Cys	Gly	His	Val	Val	Ala	Cys	Ala	Lys	Cys	Ala	Leu	Ser	Thr		
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gac	aag	tgc	ccg	atg	tgt	cgc	agg	acg	ttc	acg	aat	gcg	gtg	cgg	ctc	3761	
Asp	Lys	Cys	Pro	Met	Cys	Arg	Arg	Thr	Phe	Thr	Asn	Ala	Val	Arg	Leu		
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tac	ttc	tcg	tga													3773	
Tyr	Phe	Ser															
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<210> 2
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 <212> PRT
 <213> Bombyx mori

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 35 40 45
 Pro Ser Ser Ser Ala Asp Lys Thr Asp Asn His Asp Thr Phe Asn Phe
 50 55 60
 Leu Pro Asp Met Pro Asp Met Arg Arg Glu Glu Glu Arg Leu Lys Thr
 65 70 75 80
 Phe Asp Gln Trp Pro Val Thr Phe Leu Thr Pro Glu Gln Leu Ala Arg
 85 90 95
 Asn Gly Phe Tyr Tyr Leu Gly Arg Gly Asp Glu Val Cys Cys Ala Phe
 100 105 110
 Cys Lys Val Glu Ile Met Arg Trp Val Glu Gly Asp Asp Pro Ala Ala
 115 120 125

Asp His Arg Arg Trp Ala Pro Gln Cys Pro Phe Val Arg Lys Gln Met
 130 135 140
 Tyr Ala Asn Ala Gly Gly Glu Ala Thr Ala Val Gly Arg Asp Glu Cys
 145 150 155 160
 Gly Ala Ser Ala Ala Thr Gln Pro Pro Arg Met Pro Gly Pro Val His
 165 170 175
 Ala Arg Tyr Ser Thr Glu Ala Ala Arg Leu Ala Thr Phe Lys Asp Trp
 180 185 190
 Pro Arg Arg Met Arg Gln Lys Pro Glu Glu Leu Ala Glu Ala Gly Phe
 195 200 205
 Phe Tyr Thr Gly Gln Gly Asp Lys Thr Lys Cys Phe Tyr Cys Asp Gly
 210 215 220
 Gly Leu Lys Asp Trp Glu Ser Asp Asp Val Pro Trp Glu Gln His Ala
 225 230 235 240
 Arg Trp Phe Asp Arg Cys Ala Tyr Val Gln Leu Val Lys Gly Arg Asp
 245 250 255
 Tyr Ile Gln Lys Val Lys Ser Glu Ala Thr Ala Ile Ser Ala Ser Glu
 260 265 270
 Glu Glu Gln Ala Ala Thr Asn Asp Ser Thr Lys Asn Val Ala Gln Glu
 275 280 285
 Gly Glu Lys His Leu Asp Asp Ser Lys Ile Cys Lys Ile Cys Tyr Ser
 290 295 300
 Glu Glu Arg Asn Val Cys Phe Val Pro Cys Gly His Val Val Ala Cys
 305 310 315 320
 Ala Lys Cys Ala Leu Ser Thr Asp Lys Cys Pro Met Cys Arg Arg Thr
 325 330 335
 Phe Thr Asn Ala Val Arg Leu Tyr Phe Ser
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<210> 3

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<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic primer

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<222> (3)

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<223> a, c, g or t

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<210> 4
<211> 17
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<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic primer

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<210> 5
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<213> Artificial Sequence

<220>
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18

<210> 6
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<400> 6
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<210> 7
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<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic
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<210> 8
<211> 172
<212> PRT
<213> Bombyx mori

<400> 8
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Thr Pro Glu Gln Leu Ala Arg Asn Gly Phe Tyr Tyr Leu Gly Arg Gly
20 25 30
Asp Glu Val Cys Cys Ala Phe Cys Lys Val Glu Ile Met Arg Trp Val
35 40 45
Glu Gly Asp Asp Pro Ala Ala Asp His Arg Arg Trp Ala Pro Gln Cys
50 55 60
Pro Phe Val Glu Ala Ala Arg Leu Ala Thr Phe Lys Asp Trp Pro Arg

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Arg	Met	Arg	Gln	Lys	Pro	Glu	Glu	Leu	Ala	Glu	Ala	Gly	Phe	Phe	Tyr
				85					90					95	
Thr	Gly	Gln	Gly	Asp	Lys	Thr	Lys	Cys	Phe	Tyr	Cys	Asp	Gly	Gly	Leu
			100					105					110		
Lys	Asp	Trp	Glu	Ser	Asp	Asp	Val	Pro	Trp	Glu	Gln	His	Ala	Arg	Trp
		115					120					125			
Phe	Asp	Arg	Cys	Ala	Tyr	Val	Leu	Cys	Lys	Ile	Cys	Tyr	Ser	Glu	Glu
	130					135					140				
Arg	Asn	Val	Cys	Phe	Val	Pro	Cys	Gly	His	Val	Val	Ala	Cys	Ala	Lys
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Cys	Ala	Leu	Ser	Thr	Asp	Lys	Cys	Pro	Met	Cys	Arg				
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<210> 9
 <211> 172
 <212> PRT
 <213> Spodoptera frugiperda

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			20					25					30		
Asp	Glu	Ala	Arg	Cys	Ala	Phe	Cys	Lys	Val	Glu	Ile	Met	Arg	Trp	Val
		35					40					45			
Glu	Gly	Asp	Asp	Pro	Ala	Lys	Asp	His	Gln	Arg	Trp	Ala	Pro	Gln	Cys
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Pro	Phe	Val	Glu	Ala	Ala	Arg	Leu	Arg	Ser	Phe	Lys	Asp	Trp	Pro	Arg
65					70					75					80
Cys	Met	Arg	Gln	Lys	Pro	Glu	Glu	Leu	Ala	Glu	Ala	Gly	Phe	Phe	Tyr
				85					90					95	
Thr	Gly	Gln	Gly	Asp	Lys	Thr	Lys	Cys	Phe	Tyr	Cys	Asp	Gly	Gly	Leu
			100					105					110		
Lys	Asp	Trp	Glu	Asn	His	Asp	Val	Pro	Trp	Glu	Gln	His	Ala	Arg	Trp
	115						120					125			
Phe	Asp	Arg	Cys	Ala	Tyr	Val	Leu	Cys	Lys	Ile	Cys	Tyr	Ala	Glu	Glu
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Arg	Asn	Val	Cys	Phe	Val	Pro	Cys	Gly	His	Val	Val	Ala	Cys	Ala	Lys
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Cys	Ala	Leu	Ala	Ala	Asp	Lys	Cys	Pro	Met	Cys	Arg				
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<210> 10
 <211> 172
 <212> PRT
 <213> Trichoplusia ni

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 Ser Gly Glu Gln Leu Ala Arg Asn Gly Phe Tyr Tyr Leu Gly Arg Gly
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 Asp Glu Val Arg Cys Ala Phe Cys Lys Val Glu Ile Met Arg Trp Val
 35 40 45
 Glu Gly Asp Asp Pro Ala Lys Asp His Gln Arg Trp Ala Pro Gln Cys
 50 55 60
 Pro Phe Val Glu Ala Ala Arg Leu Arg Ser Phe Lys Asp Trp Pro Arg
 65 70 75 80
 Cys Met Arg Gln Lys Pro Glu Glu Leu Ala Glu Ala Gly Phe Phe Tyr
 85 90 95
 Thr Gly Gln Gly Asp Lys Thr Lys Cys Phe Tyr Cys Asp Gly Gly Leu
 100 105 110
 Lys Asp Trp Glu Asn Asp Asp Val Pro Trp Glu Gln His Ala Arg Trp
 115 120 125
 Phe Asp Arg Cys Ala Tyr Val Leu Cys Lys Ile Cys Phe Ala Glu Glu
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 Arg Asn Val Cys Phe Val Pro Cys Gly His Val Val Ala Cys Ala Lys
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 Cys Ala Leu Ala Ala Asp Lys Cys Pro Met Cys Arg
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<210> 11
 <211> 172
 <212> PRT
 <213> Cydia pomonella granulovirus

<400> 11
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 Ser Pro Glu Thr Met Ala Lys Asn Gly Phe Tyr Tyr Leu Gly Arg Ser
 20 25 30
 Asp Glu Val Arg Cys Ala Phe Cys Lys Val Glu Ile Met Arg Trp Lys
 35 40 45
 Glu Gly Glu Asp Pro Ala Ala Asp His Lys Lys Trp Ala Pro Gln Cys
 50 55 60
 Pro Phe Val Glu Ala Ala Arg Val Lys Ser Phe His Asn Trp Pro Arg
 65 70 75 80

<212> PRT

<213> *Drosophila melanogaster*

<400> 13

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			20					25					30		
Asp	Lys	Val	Lys	Cys	Phe	Phe	Cys	Gly	Val	Glu	Ile	Gly	Cys	Trp	Glu
		35					40					45			
Gln	Glu	Asp	Gln	Pro	Val	Pro	Glu	His	Gln	Arg	Trp	Ser	Pro	Asn	Cys
	50					55					60				
Pro	Leu	Leu	Glu	Thr	Ala	Arg	Leu	Arg	Thr	Phe	Glu	Ala	Trp	Pro	Arg
	65				70					75					80
Asn	Leu	Lys	Gln	Lys	Pro	His	Gln	Leu	Ala	Glu	Ala	Gly	Phe	Phe	Tyr
				85					90					95	
Thr	Gly	Val	Gly	Asp	Arg	Val	Arg	Cys	Phe	Ser	Cys	Gly	Gly	Gly	Leu
			100					105					110		
Met	Asp	Trp	Asn	Asp	Asn	Asp	Glu	Pro	Trp	Glu	Gln	His	Ala	Leu	Trp
		115					120					125			
Leu	Ser	Gln	Cys	Arg	Phe	Val	Leu	Cys	Lys	Ile	Cys	Tyr	Gly	Ala	Glu
		130				135					140				
Tyr	Asn	Thr	Ala	Phe	Leu	Pro	Cys	Gly	His	Val	Val	Ala	Cys	Ala	Lys
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Cys	Ala	Ser	Ser	Val	Thr	Lys	Cys	Pro	Leu	Cys	Arg				
				165					170						

<210> 14

<211> 68

<212> PRT

<213> *Bombyx mori*

<400> 14

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Gln	Lys	Pro	Glu	Glu	Leu	Ala	Glu	Ala	Gly	Phe	Phe	Tyr	Thr	Gly	Gln
			20					25					30		
Gly	Asp	Lys	Thr	Lys	Cys	Phe	Tyr	Cys	Asp	Gly	Gly	Leu	Lys	Asp	Trp
		35					40					45			
Glu	Ser	Asp	Asp	Val	Pro	Trp	Glu	Gln	His	Ala	Arg	Trp	Phe	Asp	Arg
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Cys	Ala	Tyr	Val												
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<210> 15

<211> 68
<212> PRT
<213> Spodoptera frugiperda

<400> 15
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20 25 30
Gly Asp Lys Thr Lys Cys Phe Tyr Cys Asp Gly Gly Leu Lys Asp Trp
35 40 45
Glu Asn His Asp Val Pro Trp Glu Gln His Ala Arg Trp Phe Asp Arg
50 55 60
Cys Ala Tyr Val
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<210> 16
<211> 68
<212> PRT
<213> Trichoplusia ni

<400> 16
Glu Ala Ala Arg Leu Arg Ser Phe Lys Asp Trp Pro Arg Cys Met Arg
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Gln Lys Pro Glu Glu Leu Ala Glu Ala Gly Phe Phe Tyr Thr Gly Gln
20 25 30
Gly Asp Lys Thr Lys Cys Phe Tyr Cys Asp Gly Gly Leu Lys Asp Trp
35 40 45
Glu Asn Asp Asp Val Pro Trp Glu Gln His Ala Arg Trp Phe Asp Arg
50 55 60
Cys Ala Tyr Val
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<210> 17
<211> 68
<212> PRT
<213> Cydia pomonella granulovirus

<400> 17
Glu Ala Ala Arg Val Lys Ser Phe His Asn Trp Pro Arg Cys Met Lys
1 5 10 15
Gln Arg Pro Glu Gln Met Ala Asp Ala Gly Phe Phe Tyr Thr Gly Tyr
20 25 30
Gly Asp Asn Thr Lys Cys Phe Tyr Cys Asp Gly Gly Leu Lys Asp Trp
35 40 45
Glu Pro Glu Asp Val Pro Trp Glu Gln His Val Arg Trp Phe Asp Arg
50 55 60

Cys Ala Tyr Val
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<210> 18
<211> 68
<212> PRT
<213> *Orgyia pseudotsugata*

<400> 18
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Gln Arg Pro Glu Glu Leu Ala Glu Ala Gly Phe Phe Tyr Thr Gly Gln
20 25 30
Gly Asp Lys Thr Arg Cys Phe Cys Cys Asp Gly Gly Leu Lys Asp Trp
35 40 45
Glu Pro Asp Asp Ala Pro Trp Gln Gln His Ala Arg Trp Tyr Asp Arg
50 55 60

Cys Glu Tyr Val
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<210> 19
<211> 68
<212> PRT
<213> *Drosophila melanogaster*

<400> 19
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Gln Lys Pro His Gln Leu Ala Glu Ala Gly Phe Phe Tyr Thr Gly Val
20 25 30
Gly Asp Arg Val Arg Cys Phe Ser Cys Gly Gly Gly Leu Met Asp Trp
35 40 45
Asn Asp Asn Asp Glu Pro Trp Glu Gln His Ala Leu Trp Leu Ser Gln
50 55 60

Cys Arg Phe Val
65

<210> 20
<211> 37
<212> PRT
<213> *Bombyx mori*

<400> 20
Leu Cys Lys Ile Cys Tyr Ser Glu Glu Arg Asn Val Cys Phe Val Pro
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Cys Gly His Val Val Ala Cys Ala Lys Cys Ala Leu Ser Thr Asp Lys
20 25 30

Cys Pro Met Cys Arg

<210> 21
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 <212> PRT
 <213> *Spodoptera frugiperda*

<400> 21
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 1 5 10 15
 Cys Gly His Val Val Ala Cys Ala Lys Cys Ala Leu Ala Ala Asp Lys
 20 25 30
 Cys Pro Met Cys Arg
 35

<210> 22
 <211> 37
 <212> PRT
 <213> *Trichoplusia ni*

<400> 22
 Leu Cys Lys Ile Cys Phe Ala Glu Glu Arg Asn Val Cys Phe Val Pro
 1 5 10 15
 Cys Gly His Val Val Ala Cys Ala Lys Cys Ala Leu Ala Ala Asp Lys
 20 25 30
 Cys Pro Met Cys Arg
 35

<210> 23
 <211> 37
 <212> PRT
 <213> *Cydia pomonella granulovirus*

<400> 23
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 1 5 10 15
 Cys Gly His Val Val Ala Cys Ala Lys Cys Ala Leu Ser Val Asp Lys
 20 25 30
 Cys Pro Met Cys Arg
 35

<210> 24
 <211> 37
 <212> PRT
 <213> *Orgyia pseudotsugata*

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 Cys Gly His Val Val Ala Cys Gly Lys Cys Ala Ala Gly Val Thr Thr

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25

30

Cys Pro Val Cys Arg
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<211> 37

<212> PRT

<213> Drosophila melanogaster

<400> 25

Leu Cys Lys Ile Cys Tyr Gly Ala Glu Tyr Asn Thr Ala Phe Leu Pro
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Cys Gly His Val Val Ala Cys Ala Lys Cys Ala Ser Ser Val Thr Lys
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Cys Pro Leu Cys Arg
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<223> Description of Artificial Sequence: Synthetic fluorogenic
caspase-9 substrate

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<210> 27

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<223> Description of Artificial Sequence: Synthetic fluorogenic
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